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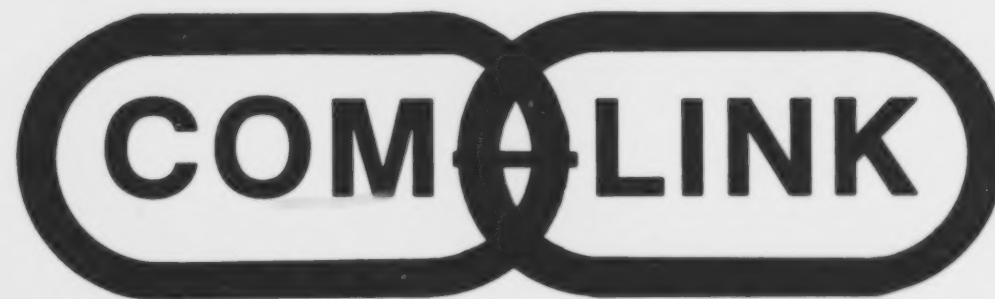
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ABSTRACT

This competency-based module uses the Ocean County (New Jersey) Vocational-Technical Schools curriculum-infused model for infusing basic skills instruction into vocational education. The model demonstrates the relationship of vocational skills to communication, mathematics, and science. The document begins with a philosophy statement; a preface; a table that explains the number of hours required for academic credit in various programs and the number of those hours that are devoted to basic skills and vocational activities; matrices that show in which courses specific basic skills are taught; a list of objectives; and an explanation of student activities. Most pages in the document are tables that describe the relationship of vocational skills to basic skills within the building trades program. These pages are organized by instructional unit and the topics within them. For each topic and associated task(s) are listed the theory and basic skills covered. Also listed are the expected student outcomes. The 20 instructional units included are: orientation; careers in the construction field; carpentry hand tools; carpentry power tools; carpentry building materials; safety; building plans; specifications plans and codes; building site preparation; footing foundation; foundation walls; floor framing; wall and ceiling framing; roof framing; exterior roofing material; exterior siding and trim; exterior doors and windows; thermal and sound insulations; interior wall and ceiling finish; and stairs. (CML)

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Competency Based Vocational Curricula



With Basic Skills And Academic Linkages

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In Cooperation With The

New Jersey State Department of Education

Division of Vocational Education

And

Ocean County Vocational-Technical School

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Building Trades

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PHILOSOPHY OF EDUCATION

The Ocean County Vocational-Technical Education Program should consist of those courses, activities and experiences which are designed to prepare students for a successful entrance in a given field of work. The program should be based upon an analysis of the worker needs of the field of work, the opportunities and requirements for entrance, and the particular characteristics and needs of the students.

We believe that:

The school should educate and train the students to live effectively in our ever-changing world.

The school should provide, for each student, intensive training toward general and specific job objectives, and setting standards of performance in keeping with the requirements of that particular field of work.

All students should evidence the interest, aptitude, and ability to profit from the specialized instruction, and this should be a condition of entrance into or continuance in a given field of work.

Equal attention should be given in the school program to develop sound character, good citizenship, ability to think critically, and maintain good mental and physical health.

The school must be constantly striving to fulfill its ultimate purpose; that of serving the students and the community. The school should give careful consideration to the needs, interests, and capacities of the students and the educational and technical background, experience, training, and professional interest of the professional staff as they develop a working philosophy of education.

PREFACE

The curriculum format employed by this project is competency based and utilizes the Ocean County Vocational-Technical Schools' curriculum infused model for the teaching of basic skills as part of vocational education. The design demonstrates the relationship of vocationally related skills to communication, mathematics and science knowledge. Proficiencies with regard to student outcomes cannot be achieved without mastery in related academic areas. All student outcome objectives are predicated upon entry level skills which reflect the dictates of the job marketplace and industry. In addition, basic skills matrices developed by the district are included. The totality of this package is designed to facilitate the vocational teaching process and to enhance the learning experiences of our students.

POTENTIAL OPPORTUNITY FOR AWARDING ACADEMIC CREDITS FOR STUDENTS AT OCEAN COUNTY VOCATIONAL-TECHNICAL SCHOOL

450 hours - 1 year course at O.C.V.T.S.
 900 hours - 2 year course at O.C.V.T.S.
 1000 hours - 2 year Beauty Culture course

120 hours per year needed for 5 credits
 60 hours per year needed for 2½ credits

COURSE	TOTAL HOURS	HOURS SPENT ON COMMUNICATION SKILLS	HOURS SPENT ON COMPUTATION SKILLS	HOURS SPENT ON SCIENCE	TIME ON OCCUPATIONAL ACTIVITIES IN CLASS OR SHOP
AIR CONDITIONING, REFRIGERATION AND HEATING	900	140	120	120	520
AUTO BODY REPAIR	900	130	120	125	525
AUTOMOTIVE MECHANICS	900	150	120	120	510
AUTOMOTIVE AND DIESEL ENGINE REBUILDING	900	216	126	125	433
BEAUTY CULTURE I AND II	1000	240	120	130	515
BUILDING TRADES	900	135	120	130	515
BUSINESS RELATIONS - MEDIA/MODELING	450	200	60	40	150
CHILD CARE AIDE	900	240	120	122	418
COMMERCIAL ART AND PRINTING	900	120	215	75	580
COMMERCIAL BUILDING CONSTRUCTION (MASONRY)	900	130	125	130	515

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COURSE	TOTAL HOURS	HOURS SPENT ON COMMUNICATION SKILLS	HOURS SPENT ON COMPUTATION SKILLS	HOURS SPENT ON SCIENCE	TIME ON OCCUPATIONAL ACTIVITIES IN CLASS OR SHOP
COMMERCIAL PHOTOGRAPHY & TELEVISION PRODUCTION	900	150	125	80	545
CUSTOM CABINETMAKING	900	130	120	60	590
DENTAL ASSISTING	450	168	65	77	140
DESIGN DRAFTING	900	135	150	165	450
ELECTRICAL TRADES	900	106	120	124	550
FASHION MERCHANDISING	450	200	60	40	150
FOOD SERVICES	900	206	132	125	437
INDUSTRIAL AUTOMATION AND ELECTRONICS	900	129	140	132	499
INTERIOR DESIGN	900	210	130	120	440
LANDSCAPING AND GREENHOUSE TECHNOLOGY	900	125	125	175	475

POTENTIAL OPPORTUNITY FOR AWARDING ACADEMIC CREDITS FOR STUDENTS AT OCEAN COUNTY VOCATIONAL-TECHNICAL SCHOOL

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 900 hours - 2 year course at O.C.V.T.S.
 1000 hours - 2 year Beauty Culture course

120 hours per year needed for 5 credits
 60 hours per year needed for 2½ credits

COURSE	TOTAL HOURS	HOURS SPENT ON COMMUNICATION SKILLS	HOURS SPENT ON COMPUTATION SKILLS	HOURS SPENT ON SCIENCE	TIME ON OCCUPATIONAL ACTIVITIES IN CLASS OR SHOP
MARINE ENGINE AND BOAT SERVICES	900	164	120	125	491
MEDICAL OFFICE RECEPTIONIST/ASSISTANT	450	173	60	77	140
MEDICAL SKILLS AND RELATED HEALTH CAREERS	450	135	65	125	125
MEDICAL SKILLS (ADVANCED)	450	125	60	125	140
PLUMBING AND HEATING	900	140	120	120	520
RECREATIONAL VEHICLE MAINTENANCE AND REPAIR	900	125	130	60	585
T.V. AND COMPUTER REPAIR	900	125	150	175	450
WELDING	900	135	120	100	545

COMMUNICATION SKILLS
=====

Listed below are all courses offered at the Ocean County Vocational-Technical School.
The asterisk indicates that the topic is studied in that curriculum.

COURSE	Functional Reading Skills	Vocabulary	Identifying Main Ideas	Meanings in Context	Inferences	Fact/Opinion Distinction	Signal Words	Parts of Text- book/Manual	Following Directions	Outlining and Note Taking	Interpretation of Maps, Graphs and Charts	Interpretation of Diagrams	Test Taking Skills	Expository Writing Skills	Problem Solving	Spelling	Oral Communications	Study Skills	Resume Writing	Job Application Skills
AIR CONDITIONING, REFRIGERATION AND HEATING	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
AUTO BODY REPAIR	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*
AUTOMOTIVE MECHANICS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
AUTOMOTIVE AND DIESEL ENGINE REBUILDING	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
BEAUTY CULTURE I AND II	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
BUILDING TRADES	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
BUSINESS RELATIONS - MEDIA/MODELING/TRAVEL	*	*	*	*	*	*	*	*	*	*	*	*	*	*		*	*	*	*	*
CHILD CARE AIDE	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*
COMMERCIAL ART AND PRINTING CAREERS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
COMMERCIAL BUILDING CONSTRUCTION (MASONRY)	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
COMMERCIAL PHOTOGRAPHY AND TELEVISION PRODUCTION	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
CUSTOM CABINETMAKING	*	*		*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*
DENTAL ASSISTING	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*

COMMUNICATION SKILLS - CONTINUED

COURSE	Functional Reading Skills	Vocabulary	Identifying Main Ideas	Meanings in Context	Inferences	Fact/Opinion Distinction	Signal Words	Parts of Text-book/Manual	Following Directions	Outlining and Note Taking	Interpretation of Maps, Graphs and Charts	Interpretation of Diagrams	Test Taking Skills	Expository Writing Skills	Problem Solving	Spelling	Oral Communications	Study Skills	Resume Writing	Job Application Skills
DESIGN DRAFTING	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
ELECTRICAL TRADES	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
FASHION MERCHANDISING	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*
FOOD SERVICES	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
INDUSTRIAL AUTOMATION AND ELECTRONICS	*	*	*		*	*			*	*	*	*	*	*	*	*	*	*	*	*
INTERIOR DESIGN	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
LANDSCAPING AND GREENHOUSE TECHNOLOGY	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*
MARINE ENGINE AND BOAT SERVICE	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MEDICAL OFFICE RECEPTIONIST/ASSISTANT	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*
MEDICAL SKILLS AND RELATED HEALTH CAREERS	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
MEDICAL SKILLS (ADVANCED)	*	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*	*	*	*
PLUMBING AND HEATING	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
RECREATIONAL VEHICLE MAINTENANCE AND REPAIR	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
T.V. AND COMPUTER REPAIR	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
WELDING	*	*	*			*	*	*	*	*	*	*	*	*	*	*	*	*	*	*

MATHEMATICS SKILLS

=====

Listed below are all courses offered at the Ocean County Vocational-Technical School.
The asterisk indicates that the topic is studied in that curriculum.

COURSE	Whole Numbers	Common Fractions	Decimals	Percentages	Weights and Measurements	Ratio and Proportion	Powers and Roots	Formulas	Estimating	Geometry	Basic Trigonometric Functions	Graphs
AIR CONDITIONING, REFRIGERATION AND HEATING	*	*	*	*	*	*	*	*	*	*	*	*
AUTO BODY REPAIR	*	*	*	*	*	*	*	*	*	*		*
AUTOMOTIVE MECHANICS	*	*	*	*	*	*	*	*	*			*
AUTOMOTIVE AND DIESEL ENGINE REBUILDING	*	*	*	*	*	*	*	*	*	*		*
BEAUTY CULTURE I AND II	*	*	*	*	*	*	*	*	*	*	*	*
BUILDING TRADES	*	*	*	*	*	*	*	*	*	*	*	*
BUSINESS RELATIONS - MEDIA/MODELING/TRAVEL	*		*	*		*			*			*
CHILD CARE AIDE	*	*	*	*	*	*		*	*	*	*	*
COMMERCIAL ART AND PRINTING CAREERS	*	*	*	*	*	*		*	*	*		*
COMMERCIAL BUILDING CONSTRUCTION (MASONRY)	*	*	*	*	*	*	*	*	*	*	*	*
COMMERCIAL PHOTOGRAPHY AND TELEVISION PRODUCTION	*	*	*	*	*	*	*	*	*	*	*	*
CUSTOM CABINETMAKING	*	*	*	*	*	*	*	*	*	*	*	*
DENTAL ASSISTING	*	*	*	*	*	*		*	*			*

MATHEMATICS SKILLS - CONTINUED

COURSE	Whole Numbers	Common Fractions	Decimals	Percentages	Weights and Measurements	Ratio and Proportion	Powers and Roots	Formulas	Estimating	Geometry	Basic Trigonometric Functions	Graphs
DESIGN DRAFTING	*	*	*	*	*	*		*	*	*	*	*
ELECTRICAL TRADES	*	*	*	*	*	*	*	*	*	*	*	*
FASHION MERCHANDISING	*	*	*	*	*	*		*	*	*		*
FOOD SERVICES	*	*	*	*	*	*		*	*	*		*
INDUSTRIAL AUTOMATION AND ELECTRONICS	*	*	*	*	*	*		*	*	*	*	*
INTERIOR DESIGN	*	*	*	*	*	*		*	*	*		*
LANDSCAPING AND GREENHOUSE TECHNOLOGY	*	*	*	*	*	*		*	*	*	*	*
MARINE ENGINE AND BOAT SERVICE	*	*	*	*	*	*		*			*	*
MEDICAL OFFICE RECEPTIONIST/ASSISTANT	*	*	*	*	*	*	*	*	*	*		*
MEDICAL SKILLS AND RELATED HEALTH CAREERS	*	*	*	*	*	*		*	*	*	*	*
MEDICAL SKILLS (ADVANCED)	*	*	*	*	*	*		*	*	*	*	*
PLUMBING AND HEATING	*	*	*	*	*	*	*	*	*	*	*	*
RECREATIONAL VEHICLE MAINTENANCE AND REPAIR	*	*	*	*	*	*	*	*			*	*
T.V. AND COMPUTER REPAIR	*	*	*	*	*	*	*	*		*	*	*
WELDING	*	*	*	*	*	*		*	*	*	*	*

SCIENCE SKILLS
=====

Listed below are all courses offered at the Ocean County Vocational-Technical School. Those listed as "Not Available" do not offer enough hours to qualify for credits in your high school. However, we have noted the skills covered. Those listed with an asterisk after the title are eligible. The asterisk indicates that the topic is studied in that curriculum.

COURSE	HUMAN ANATOMY						ASTRONOMY			CHEMISTRY			PHYSICS					ECOLOGY				
	Cellular Theory	Skeletal System	Muscles	System of Body	Diseases	Psychology	Solar System	Gravity	Weather	Matter	Chemical Reactions	Applied Chemistry	Light	Magnetism	Heat	Magnetism and Electricity	Nuclear Energy	Botany	Food Production	Fuels	Nutrition	Waste Disposal
AIR CONDITIONING, REFRIGERATION AND HEATING							*	*	*	*	*	*		*	*	*				*	*	
AUTO BODY REPAIR								*	*	*	*	*	*	*	*					*		*
AUTOMOTIVE MECHANICS								*		*	*	*	*	*	*	*				*		
AUTOMOTIVE DIESEL AND ENGINE REBUILDING								*		*	*	*		*	*	*	*			*		*
BEAUTY CULTURE I AND II	*	*	*	*	*	*				*	*	*	*		*	*					*	
BUILDING TRADES							*	*	*	*	*	*	*		*	*		*		*		
BUSINESS RELATIONS - MEDIA/MODELING/TRAVEL	N	O	T	A	V	A	I	L	A	B	L	E										
CHILD CARE AIDE	*	*	*	*	*	*			*		*	*		*	*			*	*		*	*
COMMERCIAL ART AND PRINTING CAREERS	N	O	T	A	V	A	I	L	A	B	L	E	*		*	*						*
COMMERCIAL BUILDING CONSTRUCTION (MASONRY)	*	*	*	*	*	*		*	*	*	*	*	*	*	*	*		*		*	*	*
COMMERCIAL PHOTOGRAPHY AND TELEVISION PRODUCTION	N	O	T	A	V	A	I	L	A	B	L	E	*		*	*						*
CUSTOM CABINETMAKING	*	N	O	T	A	V	A	I	L	A	B	L	E		*			*				
DENTAL ASSISTING	*	*	*	*	*	*				*	*	*	*								*	*

SCIENCE SKILLS - CONTINUED

COURSE	HUMAN ANATOMY							ASTRONOMY			CHEMISTRY			PHYSICS					ECOLOGY				
	Cellular Theory	Skeletal System	Muscles	System of Body	Diseases	Psychology		Solar System	Gravity	Weather	Matter	Chemical Reactions	Applied Chemistry	Light	Magnetism	Heat	Magnetism and Electricity	Nuclear Energy	Botany	Food Production	Fuels	Nutrition	Waste Disposal
DESIGN DRAFTING								*	*	*	*		*	*		*	*	*			*		*
ELECTRICAL TRADES								*	*	*	*	*		*	*	*	*	*		*			
FASHION MERCHANDISING	*	*	*	*		*			*		*	*	*	*								*	
FOOD SERVICES					*	*			*	*		*	*	*		*				*		*	*
INDUSTRIAL AUTOMATION AND ELECTRONICS									*		*			*	*	*	*	*			*		
INTERIOR DESIGN		*	*			*		*	*	*	*	*	*	*		*	*						
LANDSCAPING AND GREENHOUSE TECHNOLOGY								*	*	*		*	*	*		*	*		*	*	*	*	*
MARINE ENGINE AND BOAT SERVICE									*	*	*	*	*	*	*	*	*		*		*		
MEDICAL OFFICE RECEPTIONIST/ASSISTANT	N	O	T	A	V	A		I	L	A	B	L	E										*
MEDICAL SKILLS AND RELATED HEALTH CAREERS	*	*	*	*	*	*			*		*	*					*			*		*	*
MEDICAL SKILLS (ADVANCED)	*	*	*	*	*	*			*		*	*					*			*		*	*
PLUMBING AND HEATING					*			*	*	*	*	*	*			*	*		*		*		*
RECREATIONAL VEHICLE MAINTENANCE AND REPAIR	N	O	T	A	V	A		I	L	A	B	L	E	*	*	*	*				*		*
T.V. AND COMPUTER REPAIR											*	*	*	*	*	*	*				*		
WELDING									*		*	*	*	*	*	*	*				*		

COURSE OBJECTIVES

1. To prepare students with entry level skills, abilities and knowledge for employment in the building trades.
2. To present 900 hours of instruction and practice in the building trades in accordance with the course curriculum and skill profile outline.
3. To provide a detailed summary evaluation of the proficiency achieved by each student representing the most important content areas presented in the building trades skill profile.
4. To help each student develop positive attitudes and ideals related to their occupation in the building trades and understand their own capabilities and potential.
5. To instill in each student the need to plan for their professional growth through continuous learning in their chosen occupation.

STUDENT ACTIVITIES

All students enrolled in the Ocean County Vocational-Technical School are encouraged to join Vocational Industrial Clubs of America (VICA). Student activities are infused into each program. Each building has a student government and a student activities program separate from VICA. Additionally, students from each center and every class are encouraged to participate in the VICA Leadership and Job Demonstration Contests which begin in the centers and radiate throughout the district as Ocean County Vocational-Technical School inter school winners are chosen.

Student activities emphasize the basic precepts of VICA, as well as the basic tenets of democracy. Within the context, each of our programs teaches the dignity of work, high standards in trade ethics and safety, and a belief in the free enterprise economic system.

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UNIT: ORIENTATION

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TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. School rules and regulations	A. Student rights and responsibilities B. Student grievance procedures C. Student expectations D. School code of discipline E. Attendance and graduation policy F. Student transfers G. Grading system H. Accidents I. Bedside instruction J. Cooperative Industrial Education (C.I.E.) K. Driving policy L. Drug and alcohol policy M. Early dismissal procedures N. Lockers O. Driver permits P. School closing procedures Q. Smoking R. Student progress reports S. Telephones T. Theft U. Tools and equipment V. Vocational Industrial Clubs of America (VICA)	A. Note taking B. Filling out forms C. Oral communication D. Test taking skills E. Functional reading skills (Student Handbook)			A. The student will know what is expected of him/her for the school year in order to promote effective learning conditions Written test B. The student will know the standards to be met within the school and classroom Written test

UNIT: ORIENTATION - CONTINUED

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TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
II. Student contract	A. Attendance B. Request for make-up work C. Extra help with assignments or lessons D. Homework assignments E. Notebooks F. Passing test grade G. Daily grading system H. Lockers I. Dress Code J. Daily cleaning duties	A. Functional reading skills B. Following directions C. Outlining and note taking D. Oral communications			A. The student will know what is expected of him/her for the school year in order to promote effective learning conditions Written test B. The student will know the standards to be met within the school and classroom Written test

UNIT: CAREERS IN THE CONSTRUCTION FIELD

Page 3

TOPIC: CAREER OPPORTUNITIES

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. List different career opportunities in the construction field	A. Carpenter B. Design drafter C. Estimator D. Construction code officer E. Surveyor F. Roofer G. Sider H. Painter I. Drywall installer J. Lumber salesman	A. Functional reading skills B. Vocabulary C. Following directions D. Outlining and note taking E. Interpretation of blueprints F. Problem solving G. Resume writing H. Job application skills	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Geometry F. Basic trigonometric functions G. Ratio and proportion H. Powers and roots I. Formulas J. Estimating K. Graphs		A. The student will be able to demonstrate a knowledge of working with wood B. The student will be able to sketch house plans C. The student will be able to calculate material needed for house plans D. The student will be able to recognize the safety codes E. The student will be able to compute land measurements F. The student will be able to apply roof shingles G. The student will be able to install siding on a home H. The student will be able to apply paint I. The student will be able to install gypsum wall board J. The student will be able to explain the uses of different woods K. The student will be able to demonstrate a knowledge of job opportunities in the construction field on a written test

UNIT: CAREERS IN THE CONSTRUCTION FIELD - CONTINUED

Page 4

TOPIC: TRAINING

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. List training available for careers in the construction field	A. Education B. Applications C. Cooperative Industrial Education program (C.I.E.) D. Vocational Industrial Clubs of America (VICA) E. Safety rules and regulations	A. Functional reading skills B. Vocabulary C. Following directions D. Outlining and note taking E. Interpretation of blueprints F. Problem solving G. Resume writing H. Job application skills	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Geometry F. Basic trigonometric functions G. Math computations		A. The student will be able to select proper courses B. The student will be able to complete a job application and resume C. The student will be able to describe the Cooperative Industrial Education program (C.I.E.) D. The student will be able to define Vocational Industrial Clubs of America (VICA) and its purpose E. The student will be able to list the safety regulations

UNIT: CAREERS IN THE CONSTRUCTION FIELD - CONTINUED

Page 5

TOPIC: APPRENTICESHIP PROGRAM

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Explain the apprenticeship program	A. Commitment B. Age C. Term D. Skills to learn E. Salary F. Qualifications G. Orientation quiz	A. Functional reading skills B. Vocabulary C. Following directions D. Outlining and note taking E. Interpretation of blueprints F. Problem solving G. Test taking skills	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Geometry F. Basic trigonometric functions G. Ratio and proportion H. Powers and roots I. Formulas J. Estimating		A. The student will be able to define the apprenticeship program B. The student will be able to complete the orientation quiz with 70% accuracy

UNIT: CARPENTRY HAND TOOLS

Page 6

TOPIC: INTRODUCTION TO HAND TOOLS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
1. List hand tools used in the construction trades	A. Measuring and layout tools B. Sawing tools C. Edge cutting tools D. Drilling and boring tools E. Fastening and disassembling tools	A. Functional reading skills 1. Textbooks 2. Shop signs 3. Bulletin boards 4. Safety charts B. Vocabulary - safety terminology C. Following directions D. Outlining and note taking E. Interpretation of diagrams	A. Whole numbers - sawblade sizes B. Common fractions 1. Sawblade sizes 2. Hammer weights C. Geometry - geometric safety symbols	A. Chemical reactions - combustion B. Applied chemistry 1. Solvents 2. Treated lumber 3. Rail coatings C. Physics - heat	The student will be able to demonstrate an ability to read, describe and discuss carpentry hand tools

UNIT: CARPENTRY HAND TOOLS - CONTINUED

Page 7

TOPIC: MEASURING AND LAYOUT TOOLS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Utilizing measuring and layout tools in carpentry	A. Folding wood rule B. Long tape C. Layout tape D. Combination square E. Try-square F. Rafter square G. Sliding "T" bevel H. Dividers I. Level J. Scratch awl K. Plumb bob L. Chaulk line	A. Functional reading skills B. Vocabulary - hand tool identification C. Following directions D. Outlining and note taking E. Interpretation of drawings F. Problem solving G. Test taking skills 1. Written test 2. Performance test	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Powers and roots F. Basic trigonometric functions G. Formulas H. Estimating I. Measuring	Applied chemistry 1. Solvents 2. Oil 3. Grease	A. The student will be able to measure short distances or pieces of lumber B. The student will be able to measure long distances or foundations C. The student will be able to gauge a line for cutting lumber D. The student will be able to check squareness of lumber material E. The student will be able to layout pitch for rafters F. The student will be able to transfer angles 0 to 180° on a piece of lumber G. The student will be able to check walls to be level or plumb H. The student will be able to locate a point of measurement I. The student will be able to estimate vertical line on a wall J. The student will be able to transfer straight lines to widely distant points K. The student will be able to transfer measurements L. The student will be able to identify parts of a try square

UNIT: CARPENTRY HAND TOOLS - CONTINUED

Page 8

TOPIC: MEASURING AND LAYOUT TOOLS - CONTINUED

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
44					M. The student will be able to layout common rafter N. The student will be able to step off stair for stringers O. The student will be able to properly use the chalk line for a straight line P. The student will be able to identify six measuring tools Q. The student will be able to list all measuring tools
					45

UNIT: CARPENTRY HAND TOOLS - CONTINUED

Page 9

TOPIC: HAND SAWS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Utilizing hand saws in carpentry	A. Cross cut B. Rip saw C. Back saw D. Hack saw E. Keyhole saw F. Coping saw G. Drywall saw H. Miter box saw I. Dovetail saw	A. Functional reading skills B. Vocabulary - hand tool identification C. Following directions D. Outlining and note taking E. Interpretation of drawings F. Problem solving G. Test taking skills 1. Written test 2. Performance test	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Formulas F. Basic trigonometric functions G. Estimating H. Powers and roots I. Measuring		A. The student will be able to identify parts and understand angular design of cross saw to cut lumber across grain B. The student will be able to identify parts and understand angular design of rip saw to cut lumber with grain C. The student will be able to identify parts and understand design for fine cutting (molding) D. The student will be able to identify parts and understand design for cutting steel and plastic E. The student will be able to identify parts and understand design for lumber to cut circular holes F. The student will be able to identify parts and understand design to cut softwood (fine) G. The student will be able to identify parts and understand design to cut drywall H. The student will be able to identify parts and understand design to cut fine softwood (molding) I. The student will be able to demonstrate the proper use of saws J. The student will be able

UNIT: CARPENTRY HAND TOOLS - CONTINUED

Page 10

TOPIC: EDGE CUTTING TOOLS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Utilizing edge cutting tools in carpentry	A. Cabinet makers plane B. Block plane C. Rabbet plane D. Jack plane E. Utility knife F. Putty knife G. Scraper H. Wood chisels	A. Functional reading skills B. Vocabulary - hand tool identification C. Following directions D. Outlining and note taking E. Interpretation of drawings F. Problem solving G. Test taking skills - Written test - Performance test	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Formulas F. Basic trigonometric functions G. Estimating H. Powers and roots I. Measuring	Applied chemistry - Solvents - Oil - Grease	A. The student will be able to identify eight edge cutting tools for the carpentry trade B. The student will be able to identify the various parts of a plane for general use C. The student will be able to surface a piece of lumber stock flat and true D. The student will be able to plane the end grain of lumber stock E. The student will be able to cut various wood joints from specifications F. The student will be able to demonstrate the proper use of edge cutting tools

UNIT: CARPENTRY HAND TOOLS - CONTINUED

Page 11

TOPIC: DRILLING AND BORING TOOLS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Utilizing drilling and boring tools	A. Auger bits B. Auger brace C. Hand drill D. Counter sink E. Drill depth gauge F. Expansion bit G. Push drill H. Doweling jig I. Drills	A. Functional reading skills B. Vocabulary - hand tool identification C. Following directions D. Outlining and note taking E. Interpretation of drawings F. Problem solving G. Test taking skills 1. Written test 2. Performance test	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Formulas F. Basic trigonometric functions G. Estimating H. Powers and roots I. Measuring	Applied chemistry 1. Solvents 2. Oil 3. Grease	A. The student will be able to identify all nine drilling and boring tools used in carpentry B. The student will be able to list all types of drilling and boring tools used in carpentry C. The student will be able to demonstrate proper use of drilling and boring tools D. The student will be able to drill holes of proper size to accomodate screws E. The student will be able to expand bits and drill holes of different sizes

UNIT: CARPENTRY HAND TOOLS - CONTINUED

Page 12

TOPIC: FASTENING AND DISASSEMBLING TOOLS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Utilizing fastening and disassembling tools in carpentry	A. Screwdrivers B. Adjustable wrench C. Wrench set D. Nailset E. Sprial ratchet screwdrivers F. Pliers G. Phillips screwdrivers H. Ripping bar I. Rip chisel J. Claw hammer	A. Functional reading skills B. Vocabulary - hand tool identification C. Following directions D. Outlining and note taking E. Interpretation of drawings F. Problem solving G. Test taking skills - Written test - Performance test	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Formulas F. Basic trigonometric functions G. Estimating H. Powers and roots I. Measuring	Applied chemistry - Solvents - Oil - Grease	A. The student will be able to drive nails and remove nail fasteners from lumber stock B. The student will be able to install wood screws as fasteners C. The student will be able to drive nails below wood surface D. The student will be able to remove nails and use for a lever E. The student will be able to identify ten fastener tools F. The student will be able to list all fastener tools G. The student will be able to demonstrate the proper use of fastening tools H. The student will be able to achieve 70% accuracy or better on a written test

UNIT: CARPENTRY POWER TOOLS

Page 13

TOPIC: INTRODUCTION TO PORTABLE POWER TOOLS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. List of portable power tools used in the construction trades	A. Portable saw B. Saber saw C. Drills D. Belt sander E. Vibrator sander F. Power plane G. Router	A. Functional reading skills B. Vocabulary C. Following directions D. Outlining and note taking E. Problem solving F. Test taking skills 1. Written test 2. Performance test	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Formulas F. Basic trigonometric functions G. Estimating H. Geometry	Applied chemistry - solvents	A. The student will be able to demonstrate all portable tools properly B. The student will be able to pass a written safety test with 100% accuracy C. The student will be able to list safety precautions for each power tool in the program D. The student will be able to select correct tool required to complete task

UNIT: CARPENTRY POWER TOOLS - CONTINUED

Page 14

TOPIC: PORTABLE POWER TOOLS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Utilizing portable power tools in carpentry	A. Saws 1. Circular a. clutch drive b. gear drive 2. Sabre 3. Reciprocating B. Drills 1. $\frac{1}{2}$" 2. $\frac{3}{4}$" 3. Screw gun C. Power plane D. Motorized mitre box E. Portable routers F. Portable sanders G. Staplers and nailers	A. Functional reading skills B. Vocabulary C. Following directions D. Outlining and note taking E. Problem solving F. Test taking skills 1. Written test 2. Performance test	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Formulas F. Basic trigonometric functions G. Geometry H. Ratio and proportion	Applied chemistry - solvents	A. The student will be able to identify three portable electric saws B. The student will be able to label parts of three portable electric saws C. The student will be able to identify three portable electric drills D. The student will be able to label parts of three electric drills E. The student will be able to identify a power plane F. The student will be able to label parts of a power plane G. The student will be able to demonstrate proper power use of a power plane H. The student will be able to identify motorized mitre box I. The student will be able to label parts of a power mitre box J. The student will be able to demonstrate proper use of a power mitre box K. The student will be able to identify routers L. The student will be able to label parts of a portable router M. The student will be able to demonstrate proper use of a portable router

UNIT: CARPENTRY POWER TOOLS - CONTINUED

Page 15

TOPIC: PORTABLE POWER TOOLS - CONTINUED

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
					N. The student will be able to identify a portable sander O. The student will be able to label parts of a portable sander P. The student will be able to demonstrate proper use of a portable sander Q. The student will be able to identify a stapler and nailer R. The student will be able to label parts of a stapler and nailer S. The student will be able to demonstrate proper use of a power stapler and nailer T. The student will be able to explain the function and operations of power tools U. The student will be able to list safety rules for all power tools V. The student will be able to pass a written test with 70% accuracy on all power tools

UNIT: CARPENTRY POWER TOOLS - CONTINUED

Page 16

TOPIC: STATIONARY POWER TOOLS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Utilizing stationary power tools in carpentry	A. Panel saw B. Table saw C. Band saw D. Radial arm saw E. Jointer F. Drill press	A. Functional reading skills - Textbook - Handouts B. Vocabulary C. Following directions - Safety - Procedure D. Outlining and note taking - Textbook - Overhead transparencies E. Problem solving F. Test taking skills - Written test - Performance test	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Formulas F. Basic trigonometric functions G. Estimating H. Powers and roots I. Measurements - Standard - Metric J. Ratio and proportion K. Geometry	A. Physics - Heat - Energy B. Astronomy - gravity	A. The student will be able to identify all fixed power tools on a written test B. The student will be able to label parts of all fixed power tools on a written test C. The student will be able to explain the function and operation of the fixed power tool D. The student will be able to list safety rules for power tools E. The student will be able to pass a written test with 70% accuracy F. The student will be able to safely demonstrate the use of fixed power tools G. The student will be able to select the correct speed for a drill press for a job on a written test

UNIT: CARPENTRY BUILDING MATERIALS

Page 17

TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Analyze wood used in the construction trades	A. Lumber 1. Softwood 2. Hardwood 3. Plywood	A. Functional reading skills 1. Textbook 2. Handouts	A. Whole numbers	A. Natural resources 1. Trees a. roots b. leaves c. layer of cells 2. Softwood - conifers 3. Hardwood - deciduous	A. The student will be able to identify lumber classifications on a written test
II. Identify the methods used in seasoning lumber	B. Softwood	B. Vocabulary	B. Common fractions	B. Astronomy - weight	B. The student will be able to state different methods of lumber cutting
III. Compute board feet of lumber for house construction	C. Cutting methods	C. Outlining and note taking 1. Textbook 2. Overhead transparencies	C. Decimals	C. Physics 1. Strength 2. Grain pattern	C. The student will be able to explain moisture content
IV. Application of fasteners	D. Moisture content	D. Spelling	D. Percentages	D. Chemistry 1. Color 2. Odor	D. The student will be able to name types of methods used in seasoning lumber
	E. Seasoning lumber	E. Test taking skills 1. Written test 2. Performance test	E. Formulas	E. Applied chemistry 1. Nail coating 2. Screws	E. The student will be able to list common defects in lumber
	F. Lumber defects		F. Basic trigonometric functions	F. Chemical reactions 1. Polyvinyl resin glue 2. Contact cement 3. Casein glue	F. The student will be able to explain lumber grading system
	G. Grades		G. Estimating		G. The student will be able to explain plywood specification
	H. Plywood		H. Powers and roots		H. The student will be able to explain the difference of fasteners on a written test
	I. Treated lumber		I. Measurement - standard		I. The student will be able to select fasteners for the right job
	J. Fasteners 1. Nails 2. Screws 3. Adhesives		J. Ratio and proportion		J. The student will be able to solve board feet to a 90% accuracy
			K. Geometry		K. The student will be able to pass a written test with 70% accuracy
			L. Shapes		

UNIT: SAFETY

Page 18

TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Utilizing safety in the shop and construction site	A. Shop safety B. Site safety C. Clothing and personal items D. Tools 1. Hand 2. Power E. Ladders and scaffolds F. Lifting and carrying G. Fire safety H. Electrical safety	A. Functional reading skills 1. Textbook 2. Shop signage B. Vocabulary - safety terminology C. Following directions D. Outlining and note taking E. Interpretation of diagrams F. Test taking skills	A. Whole numbers - sawblade sizes B. Common fractions 1. Sawblade sizes 2. Hammer weights C. Geometry - geometric safety symbols	A. Chemical reactions - combustion B. Applied chemistry 1. Solvents 2. Treated lumber 3. Rail coatings C. Physics - heat	A. The student will be able to explain shop safety rules on a written test B. The student will be able to demonstrate safe use of ladders and scaffolds C. The student will be able to identify appropriate clothing and safety equipment on a written test D. The student will be able to select the correct tools for the right job E. The student will be able to lift objects properly with leg strength not back strength on performance test F. The student will be able to explain fire hazards, causes and methods of control on a written test G. The student will be able to identify class A, class B and class C fires H. The student will be able to pass all safety tests with 100% accuracy

UNIT: BUILDING PLANS

Page 19

TOPIC: READING PLANS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Read plans	A. Sections B. Details C. Elevation	A. Functional reading skills B. Vocabulary C. Following directions D. Outlining and note taking E. Problem solving F. Test taking skills - written test G. Interpretation of maps, graphs and charts	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Formulas F. Basic trigonometric functions G. Estimating H. Ratio and proportion I. Measurements J. Metric K. Geometry	Earth science	A. The student will be able to locate and read sections and details on a written test B. The student will be able to identify and read elevations readings on a written test C. The student will be able to interpret window and door schedules on a written test D. The student will be able to pass a written test with 70% accuracy

UNIT: BUILDING PLANS - CONTINUED

Page 20

TOPIC: SKETCHING PLANS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Sketching	A. Scale rule B. Lines and dimensions C. Symbols D. Schedules	A. Functional reading skills B. Vocabulary C. Following directions D. Outlining and note taking E. Problem solving F. Test taking skills - written test G. Interpretation of maps, graphs and charts	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Formulas F. Basic trigonometric functions G. Estimating H. Ratio and proportion I. Measurements J. Metric K. Geometry	Earth science	A. The student will be able to read a scale rule on a written test B. The student will be able to identify different types of lines and read dimensions C. The student will be able to interpret architecture symbols on a written test D. The student will be able to break down schedules from start to finish on a written test E. The student will be able to pass a written test with 70% accuracy
68					69

UNIT: BUILDING PLANS - CONTINUED

Page 21

TOPIC: COMPILING PLANS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Compile a set of plans	A. Plot plans B. Foundations C. Floor plan D. Framing plan E. Roofing plan F. Exterior and interior elevation plan G. Detail plan H. Window and door plan I. Symbols plan J. Electrical plan K. Plumbing plan L. Air conditioning plan M. Heating plan	A. Functional reading skills B. Vocabulary C. Following directions D. Outlining and note taking E. Problem solving F. Interpretation of maps, graphs and charts G. Test taking skills 1. Written test 2. Performance test	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Formulas F. Basic trigonometric functions G. Estimating H. Ratio and proportion I. Measurements J. Geometry	Earth science	A. The student will be able to identify and read plans on a written test B. The student will be able to state and read elevation of site on a written test C. The student will be able to explain and read all plans and details on a written test D. The student will be able to list all plans needed for a complete set of plans on a written test E. The student will be able to calculate material needed for plans on a written test F. The student will be able to pass a written test with 70% accuracy
					71

UNIT: SPECIFICATIONS PLANS AND CODES

Page 22

TOPIC: BUILDING SPECIFICATIONS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Compile a specification list to be attached to drawings	A. Conditions and information B. Excavating and grading C. Masonry and concrete work D. Sheet metal work E. Rough carpentry and roofing F. Finish carpentry and millwork G. Insulation, caulking and glazing H. Plaster and drywall I. Schedule for room finishers J. Painting and finishing K. Tilework L. Electrical work M. Plumbing N. Heating O. Air conditioning P. Landscaping	A. Functional reading skills B. Vocabulary C. Following directions D. Outlining and note taking E. Problem solving F. Test taking skills 1. Written test 2. Performance test	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Measurements F. Ratio and proportion	A. Earth science 1. Species of lumber 2. Roof material 3. Insulation B. Applied chemistry 1. Masonry 2. Varnish 3. Stain 4. Thinner C. Physics - heat D. Energy - electrical E. Astronomy - gravity	A. The student will be able to explain the use of building specifications on a written test B. The student will be able to define and state the purpose of specifications on a written test C. The student will be able to compose his/her own specifications list on a written test D. The student will be able to identify material needed for a specification list on a written test E. The student will be able to pass a written test with 70% accuracy

UNIT: SPECIFICATIONS PLANS AND CODES - CONTINUED

Page 23

TOPIC: BUILDING CODES

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
1. Outline the building codes to determine location of house	A. Collection of laws B. Aspects of erection - New building - Existing building C. Safety, health and welfare of occupants D. Minimum standards - Design - Quality of material - Quality of construction E. Design factors - Sizes, height and bulk of building - Room size - Ceiling height - Lighting and vents	A. Functional reading skills B. Vocabulary C. Following directions D. Outlining and note taking E. Problem solving F. Test taking skills - Written test - Performance test	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Measurements F. Ratio and proportion		A. The student will be able to explain the purpose for building codes on a written test B. The student will be able to recognize the building standards on a written test C. The student will be able to pass a written test with 70% accuracy

UNIT: BUILDING SITE PREPARATION

Page 24

TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Identify layout property lines	A. Transit - level	A. Functional reading skills	A. Whole numbers	A. Astronomy - gravity	A. The student will be able to explain the operation of the builder's level on a written test
II. Check corners of a building to be square	B. Tripod - level	1. Textbook 2. Handouts	B. Common fractions	B. Physics - heat	B. The student will be able to set up, sight and level transit on a written test
III. Construct batter boards for corners of a building	C. Measurement 1. Horizontal 2. Vertical	B. Vocabulary	C. Decimals		C. The student will be able to measure and layout angles on a written test
IV. Set up a tripod and transit	D. Layout	C. Following directions 1. Safety 2. Procedure	D. Percentages		D. The student will be able to read the vevnier scale on a written test
V. To excavate fill to level grade for building	E. Corners	D. Outlining and note taking 1. Textbook 2. Overhead transparencies	E. Formulas		E. The student will be able to use a plumb line for vertical distance on a written test
	F. Property lines	E. Problem solving	F. Basic trigonometric functions		F. The student will be able to determine elevation readings on a written test
	G. Plot plan	F. Interpretation of diagrams	G. Estimating		G. The student will be able to read plot plans on a written test
		G. Interpretation of maps, graphs and charts	H. Powers and roots		H. The student will be able to build batter board for corners on a performance test
		H. Spelling	I. Measurement 1. Standard 2. Metric		I. The student will be able to square corners on a written test
		I. Test taking skills 1. Written test 2. Performance test	J. Ratio and proportion		J. The student will be able to pass a written test with 70% accuracy
			K. Graphs		
			L. Geometry		

UNIT: FOOTING FOUNDATION

Page 25

TOPIC: PREPARATION OF MIX

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Preparing mix for concrete footing	A. Footing mix	A. Functional reading skills	A. Whole numbers	A. Chemistry	A. The student will be able to explain how to estimate quantities on a written test
	1. Concrete	1. Textbooks	B. Common fractions	1. Chemical reactions	
	2. Cement	2. Handouts	C. Decimals	2. Applied chemistry	B. The student will be able to select elements for footing mix on a written test
	3. Sand	B. Vocabulary	D. Percentages	3. Matter	
II. Preparing mix for concrete block mortar	4. Aggregates	C. Following directions	E. Formulas	B. Physics - heat	C. The student will be able to identify footing mix classification on a written test
	5. Water	D. Outlining and note taking - overhead transparencies	F. Measurement		D. The student will be able to identify mortar mix on a written test
	B. Mortar mix	E. Spelling	1. Volume		E. The student will be able to demonstrate how to mix mortar with a power mixer during a performance test
	1. Cement	F. Test taking skills	2. Standard		F. The student will be able to demonstrate a knowledge of the safety of mixing chemicals on a written test
	2. Sand	1. Written test	G. Ratio and proportion		G. The student will be able to pass a written test with 70% accuracy
	3. Water	2. Performance test	H. Estimating		
	4. Types				
	a. type I				
	b. type II				

UNIT: FOOTING FOUNDATION - CONTINUED

Page 26

TOPIC: PLACEMENT OF FOOTING

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Place concrete in a ditch for a footing	A. Footing design	A. Functional reading skills	A. Whole numbers	A. Chemistry	A. The student will be able to explain the purpose of a footing on a written test
II. Place concrete in a form for a footing	B. Forms for footings	1. Textbook 2. Handouts	B. Common fractions	1. Chemical reactions 2. Applied chemistry 3. Heat	B. The student will be able to explain the consequence of improperly built forms on a written test
III. Construct a wooden form for a footing	1. Placing concrete 2. Size and shape 3. Waterproofing 4. Placement of rebar	B. Vocabulary	C. Decimals	B. Physics - heat	C. The student will be able to demonstrate the snap tie on rebars during a performance test
		C. Following directions	D. Percentages		D. The student will be able to demonstrate building a wooden form for concrete footing during a performance test
		D. Outlining and note taking - overhead transparencies	E. Formulas		E. The student will be able to pass a written test with 70% accuracy
		E. Spelling	F. Measurement		
		F. Test taking skills	1. Volume 2. Standard		
		1. Written test 2. Performance test	G. Ratio and proportion		
			H. Estimating		

UNIT: FOUNDATION WALLS

Page 27

TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Set concrete block for foundation walls	A. Concrete block - Size and shape - Waterproofing - Basement - Crawl space	A. Functional reading skills - Textbook - Handouts	A. Whole numbers	A. Chemistry - Chemical reactions - Applied chemistry - Heat	A. The student will be able to identify foundation walls and purpose on a written test
II. Construct a six block pyramid and be level and plumb	B. Slab on ground - Entrance - Monolithic pour - Sidewalks and drives - Screening - Edging	B. Vocabulary	B. Common fractions	B. Physics - heat	B. The student will be able to lay a concrete block level and plumb during a performance test
III. Construct a foundation wall with a mason line as a guide	C. Wood foundation - Stone - Pipe	C. Following directions	C. Decimals		C. The student will be able to demonstrate pouring and finishing of flat work during a performance test
		D. Outlining and note taking - overhead transparencies	D. Percentages		D. The student will be able to demonstrate the use of mason tools correctly during a performance test
		E. Spelling	E. Formulas		E. The student will be able to pass a written test with 70% accuracy
		F. Test taking skills - Written test - Performance test	F. Measurement - Volume - Standard		
			G. Ratio and proportion		
			H. Estimating		

TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Identify two different types of floor frame construction	A. Types of framing 1. Platform 2. Balloon	A. Functional reading skills 1. Textbook 2. Handouts	A. Whole numbers B. Common fractions C. Decimals	A. Natural resources 1. Tree 2. Softwood 3. Hardwood	A. The student will be able to identify the type of floor framing on a written test
II. Compute the correct species and size of lumber for a span	B. Girders and beams 1. Steel beams 2. Post and columns 3. Framing over girder and beam	B. Vocabulary C. Problem solving D. Outlining and note taking 1. Textbook 2. Overhead transparencies	D. Percentages E. Formulas F. Basic trigonometric functions	B. Astronomy - weight C. Physics 1. Strength 2. Grain pattern 3. Span	B. The student will be able to describe steel beams versus wood beams framing on a written test C. The student will be able to demonstrate platform framing during a performance test
III. Identify the twist bon and crown cup in a piece of lumber	C. Sill construction - installing sill D. Joists 1. Layout out 2. Installing 3. Frame opening 4. Bridging 5. Cutting joist 6. Steel joist 7. Floor trusses	E. Following directions 1. Safety 2. Procedure F. Test taking skills 1. Written test 2. Performance test	G. Estimating H. Powers and roots I. Measurements 1. Standard 2. Metric J. Ratio and proportion K. Geometry	D. Chemistry 1. Color 2. Odor 3. Matter 4. Chemical reactions	D. The student will be able to select proper species and size of lumber for a span on a written test E. The student will be able to select straight and true piece of lumber during a performance test
IV. Set floor framing members					F. The student will be able to identify parts of a floor framing system on a written test
V. Fastening sill to foundation wall by anchor bolts					G. The student will be able to explain sheet material and T and G material for floor framing on a written test
VI. Spacing for floor joist member from architect plans					H. The student will be able to identify spacing of floor joist from prints on a written test
VII. Fastening floor joist to headers					I. The student will be able to pass a written test with 70% accuracy
VIII. Identify bridging to support floor joist to vertical position					J. The student will be able to install floor joist with three 16 D nails - faced nailed through header during a performance test
IX. Stagger sub-floor sheet					

UNIT: FLOOR FRAMING - CONTINUED

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TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
					K. The student will be able to cut bridging and install with two 8 D nails during a performance test. L. The student will be able to install sub floor with 6 D nails during a performance test.

TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Construct a wall frame for a building	A. Parts of a wall	A. Functional reading skills	A. Whole numbers	A. Natural resources	A. The student will be able to identify the parts of a framing wall on a written test
II. Fastening all pre-cut members	1. Corners 2. Partition intersections 3. Rough opening 4. Header construction 5. Double plates 6. Plate layout	1. Textbook 2. Handouts	B. Common fractions	1. Tree 2. Softwood 3. Hardwood	B. The student will be able to explain a partition and non bearing partition function on a written test
III. Identify all pre-cuts and plates needed for wall construction	B. Constructing wall section	B. Vocabulary	C. Decimals	B. Astronomy - weight	C. The student will be able to describe a ceiling joist and explain its function on a written test
IV. Identify ceiling members from a set of plans	1. Partition 2. Non-partition 3. Plumbing walls 4. Bracing 5. Wall sheathing	C. Following directions	D. Percentages	C. Physics	D. The student will be able to install wall members with two 16 D nails during a performance test
V. Determine species and size of ceiling joist from plans	C. Ceiling framing	1. Safety 2. Procedure	E. Formulas	D. Chemistry	E. The student will be able to determine if ceiling joists are required on a written test
VI. Fastening all ceiling joists	1. Strong backs 2. Hap cuts 3. Fasten technic	D. Outlining and note taking	F. Basic trigonometric functions	1. Strength 2. Grain pattern 3. Span	F. The student will be able to determine species and size to be used on a written test
		1. Textbook 2. Overhead transparencies	G. Estimating	1. Color 2. Odor 3. Matter 4. Chemical reactions	G. The student will be able to fasten all ceiling joists with 12 D and 16 D nails
		E. Problem solving	H. Powers and roots		H. The student will be able to pass a written test with 70% accuracy
		F. Test taking skills	I. Measurements		
		1. Written test 2. Performance test	1. Standard 2. Metric		
			J. Ratio and proportion		
			K. Geometry		

UNIT: ROOF FRAMING

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TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Identify and discuss roof members	A. Types of roofs	A. Functional reading skills	A. Whole numbers	A. Natural resources	A. The student will be able to identify the type of roofs on a written test
II. Name five popular roof designs for residential homes	1. Gable 2. Hip 3. Flat 4. Gambrel 5. Mansard 6. Roof trusses	1. Textbook 2. Handouts	B. Common fractions	1. Tree 2. Softwood	B. The student will be able to list the parts of a rafter on a written test
III. Compute rafter length	B. Parts of a rafter	B. Vocabulary	C. Decimals	B. Astronomy - weight	C. The student will be able to demonstrate laying out rafter cuts on a written test
IV. Identify the parts of a rafter	1. Slope and pitch 2. Unit measurement 3. Size 4. Plumb cut, tail cut, building line cut and seat cut 5. Laying out rafter	C. Following directions	D. Percentages	C. Physics	D. The student will be able to explain the purpose of roof member and uses on a written test
	D. Rafters	1. Safety 2. Procedure	E. Formulas	1. Strength 2. Grain pattern 3. Forces 4. Span	E. The student will be able to calculate mathematical length of rafter on a written test
	1. Common 2. Hip and valley 3. Jack	D. Outlining and note taking	F. Basic trigonometric functions	D. Chemistry	F. The student will be able to pass a written test with 70% accuracy
	D. Roof support	1. Textbook 2. Overhead transparencies	G. Estimating	1. Color 2. Odor 3. Matter 4. Chemical reactions	
	1. Collar beam 2. Porlins	E. Problem solving	H. Powers and roots		
	E. Structural panels	F. Spelling	I. Measurements		
		G. Test taking skills	1. Standard 2. Metric		
		1. Written test 2. Performance test	J. Ratio and proportion		
			K. Geometry		

UNIT: EXTERIOR ROOFING MATERIAL

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TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Identify and discuss the four different types of roofing material	A. Types of material 1. Asphalt 2. Wood 3. Mineral fiber 4. Slate	A. Functional reading skills 1. Textbook 2. Handouts	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Formulas F. Basic trigonometric functions G. Estimating H. Powers and roots I. Measurements 1. Standard 2. Metric J. Ratio and proportion K. Geometry	A. Chemistry 1. Color 2. Odor 3. Matter 4. Chemical reactions B. Physics 1. Strength 2. Heat C. Astronomy 1. Weather 2. Gravity	A. The student will be able to identify types of roofing material used on a written test B. The student will be able to explain roofing terms on a written test C. The student will be able to install strip shingles procedure with fasteners during a performance test D. The student will be able to demonstrate installation of 3-tab shingle during a performance test E. The student will be able to pass a written test with 70% accuracy
II. Use proper vocabulary in roofing trade	B. Roofing terms 1. Square 2. Exposure 3. Head lap 4. Side lap	B. Vocabulary C. Following directions 1. Safety 2. Procedure			
III. Identify a 3-tab shingle and installing shingles with 1" roofing nails	C. Flashing 1. Eaves 2. Open valley 3. Woven 4. Closed 5. Chimney	D. Outlining and note taking 1. Textbook 2. Overhead transparencies			
IV. To be knowledgeable of a 6" off set method of installing roof shingles type asphalt-3-tab	D. Applications 1. Starter strip 2. Strip shingles 3. Fasteners 4. First and succeeding course E. Low-slope roofs 1. Roll roofs 2. Re-roofs 3. Built up F. Tile roof	E. Problem solving F. Spelling G. Test taking skills 1. Written test 2. Performance test			

UNIT: EXTERIOR SIDING AND TRIM

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TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Identify the types of cornice design for homes	A. Cornice design 1. Open 2. Closed	A. Functional reading skills 1. Textbook 2. Handouts	A. Whole numbers B. Common fractions C. Decimals D. Percentages E. Formulas F. Basic trigonometric functions G. Estimating H. Powers and roots I. Measurements - standard J. Ratio and proportion K. Geometry	A. Physics 1. Strength 2. Grain pattern 3. Clear span 4. Heat B. Chemistry - chemical reaction C. Astronomy 1. Weight 2. Weather	A. The student will be able to identify a cornice design on a written test B. The student will be able to list parts of cornice construction on a written test C. The student will be able to explain various sidings wall finish on a written test D. The student will be able to demonstrate by installing various siding to specification E. The student will be able to demonstrate a knowledge of different siding on a written test F. The student will be able to pass a written test with 70% accuracy
II. Name the parts of a cornice design	B. Parts of a cornice and rake construction 1. Ledger 2. Lookout 3. Sub-fascia 4. Fascia 5. Molding 6. Soffit	B. Vocabulary C. Following directions 1. Safety 2. Procedure D. Outlining and note taking 1. Textbook 2. Overhead transparencies			
III. Identify different types of wall finish used in the construction of homes	C. Wall finish 1. Horizontal siding 2. Vertical siding 3. Wood shingles 4. Mineral fiber 5. Plywood siding 6. Hardboard siding 7. Aluminum siding 8. Vinyl siding 9. Stucco 10. Brick or stone veneer	E. Problem solving F. Spelling G. Test taking skills 1. Written test 2. Performance test			
IV. Explain the advantage of different siding used	D. Installation procedure E. Nailing F. Estimating amount of siding needed				

UNIT: EXTERIOR DOORS AND WINDOWS

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TOPIC: WINDOWS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Identify and discuss the advantages of types of windows	A. Manufacture 1. Aluminum 2. Wood 3. Steel	A. Functional reading skills 1. Textbook 2. Handouts	A. Whole numbers	A. Physics 1. Strength 2. Span 3. Heat	A. The student will be able to identify the types of windows on a written test
II. Label and name all parts of a wooden window	B. Manufacturer standards C. Types of windows 1. Double hung 2. Horizontal sliding 3. Casement 4. Awning 5. Valousious 6. Fixed windows 7. Skylights	B. Vocabulary C. Following directions 1. Safety 2. Procedure	B. Common fractions C. Decimals D. Percentages E. Formulas F. Basic trigonometric functions	B. Chemistry - chemical reaction C. Astronomy - weather	B. The student will be able to list all the parts of a wooden window on a written test
III. To install a window to be level and plumb	D. Parts of window 1. Sill 2. Jamb 3. Screens 4. Sizes E. Installing window units	D. Outlining and note taking 1. Textbook 2. Overhead transparencies E. Problem solving F. Spelling G. Test taking skills 1. Written test 2. Performance test	G. Estimating H. Powers and roots I. Measurements 1. Standard 2. Metric 3. Units J. Ratio and proportion K. Geometry		C. The student will be able to install wood, aluminum and steel windows to specifications D. The student will be able to demonstrate installing a wooden window level and plumb E. The student will be able to pass a written test with 70% accuracy

UNIT: EXTERIOR DOORS AND WINDOWS

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TOPIC: DOORS

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Identify and discuss the advantages of types of doors	A. Manufacture 1. Wood 2. Metal	A. Functional reading skills 1. Textbook 2. Handouts	A. Whole numbers B. Common fractions C. Decimals	A. Physics 1. Strength 2. Span 3. Heat	A. The student will be able to identify exterior door manufacture type on a written test
II. Label and name all parts of a wooden door	B. Types of doors 1. Exterior 2. Interior 3. Pre-hung 4. Sliding glass doors 5. Garage door	B. Vocabulary C. Following directions 1. Safety 2. Procedure	D. Percentages E. Formulas F. Basic trigonometric functions	B. Chemistry - chemical reactions C. Astronomy - weather	B. The student will be able to list types of doors used on a written test
III. To install a door to be level and plumb	C. Hardware - counterbalance	D. Outlining and note taking 1. Textbook 2. Overhead transparencies E. Problem solving F. Spelling G. Test taking skills 1. Written test 2. Performance test	G. Estimating H. Powers and roots I. Measurements 1. Standard 2. Metric 3. Units J. Ratio and proportion K. Geometry		C. The student will be able to install exterior doors and pre-hung doors to specifications D. The student will be able to pass a written test with 70% accuracy

TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Discuss how heat is transmitted in a home	A. Heat transmitted	A. Functional reading skills	A. Whole numbers	A. Physics	A. The student will be able to identify types of insulation on a written test
II. Identify types of insulation used	1. Conduction 2. Convection 3. Radiation	1. Textbook 2. Handouts	B. Common fractions	1. Heat 2. Light 3. Energy 4. Strength	B. The student will be able to list how heat is transmitted on a written test
III. Name the sound control element needed	B. Types of insulation	B. Vocabulary	C. Decimals	B. Chemistry	C. The student will be able to list elements needed for a sound control on a written test
	1. Reflective 2. Battand blanket 3. Fill insulation 4. Rigid 5. Fiberglass rock wool 6. Foamboard 7. Cellulose	C. Following directions	D. Percentages	1. Chemical reaction 2. Matter	D. The student will be able to install insulation for walls, floors and ceilings
	C. Insulation factors	1. Safety 2. Procedure	E. Formulas	C. Astronomy - weather	E. The student will be able to pass a written test with 70% accuracy
	1. Condensation 2. Vapor barriers 3. Ventilation	D. Outlining and note taking	F. Ratio and proportion		
	D. Sound control	1. Textbook 2. Overhead transparencies	G. Power and roots		
	1. Intensity 2. Transmission 3. Wall constructions 4. Floors and ceiling 5. Doors and windows 6. Suspended ceiling	E. Problem solving	H. Measurements - standard		
	E. Installation of material	F. Spelling	I. Estimating		
	F. Maintenance	G. Test taking skills	J. Geometry		
		1. Written test 2. Performance test			

UNIT: INTERIOR WALL AND CEILING FINISH

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TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Identify interior wall parts	A. Interior wall finish	A. Functional reading skills	A. Whole numbers	A. Chemistry	A. The student will be able to identify various wall finishes on a written test
	1. Drywall	1. Textbook	B. Common fractions	1. Chemical reaction	
	2. Gypsum wall board	2. Handouts	C. Decimals	2. Adhesive	
	3. Gypsum paneling		D. Percentages	B. Physics	B. The student will be able to list various fastening methods of installing drywall on a written test
II. Describe the method used in drywall installation	4. Plywood and particle board	B. Vocabulary	E. Formulas	1. Strength	
	5. Hardboard and fiberboard	C. Following directions	F. Basic trigonometric functions	2. Span	
	6. Plaster	1. Safety	G. Estimating	C. Astronomy - weight	C. The student will be able to install drywall and ceiling board
	B. Drywall construction	2. Procedure	H. Powers and roots		D. The student will be able to demonstrate installing drywall board during a performance test
	1. Single layer	D. Outlining and note taking	I. Measurement - standard		E. The student will be able to pass a written test with 70% accuracy
	2. Measuring and cutting	1. Textbook	J. Ratio and proportion		
	3. Nails and screws	2. Overhead transparencies	K. Geometry		
	4. Adhesive	E. Problem solving			
	5. Joint concealment	F. Spelling			
	C. Moisture resistant (MR) wallboard	G. Test taking skills			
	D. Design factors	1. Written test			
	1. Manufacture	2. Performance test			
	2. Size and height				
	E. Title				
	F. Suspended ceiling				

TOPIC:

Task	Theory	Communication Skills	Mathematics Skills	Science Knowledge	Student Outcome
I. Identify the types of stairs used in home construction	A. Types of stairs 1. Open 2. Closed	A. Functional reading skills 1. Textbook 2. Handouts	A. Whole numbers B. Common fractions C. Decimals	A. Chemistry 1. Chemical reaction 2. Adhesive	A. The student will be able to identify types of stairs used on a written test
II. Name the parts of stair construction	B. Parts and terms 1. Risers 2. Tread 3. Stringer 4. Unit rise 5. Unit run 6. Total rise 7. Total run	B. Vocabulary C. Following directions 1. Safety 2. Procedure	D. Percentages E. Formulas F. Basic trigonometric functions	B. Physics 1. Strength 2. Span 3. Grain pattern	B. The student will be able to list parts of a stair construction on a written test
III. Compute stair design	C. Stair design D. Stair calculation E. Type of stringers 1. Open 2. Semi housed 3. Housed stringer F. Stairs 1. Winder 2. Open 3. Spiral 4. Disappearing units	D. Outlining and note taking 1. Textbook 2. Overhead transparencies E. Problem solving F. Spelling G. Test taking skills 1. Written test 2. Performance test	G. Estimating H. Powers and roots I. Measurement - standard J. Ratio and proportion K. Geometry		C. The student will be able to calculate riser and tread relationship on a written test D. The student will be able to explain various types of stairs on a written test E. The student will be able to demonstrate construction of two step stringers F. The student will be able to pass a written test with 70% accuracy

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